

CLAIMS

1. Method for assembling a rack portion (1, 2) of a self-raising oil rig, which rack portion (1, 2) is constituted by at least one rectangular plate (3, 3') which comprises teeth (41, 51) at the longitudinal lateral faces (4, 5) thereof and at least one reinforcement (8, 8', 9, 9', 10, 10') in the form of a half-shell which is welded to a main face (6, 7) of the at least one rectangular plate (3, 3'), along the longitudinal edges (11, 12) of the at least one reinforcement (8, 8', 9, 9', 10, 10'), characterized in that:

- an internal chamfer (16) and an external chamfer (15) which are separated by a projection (17) having thickness T are produced at each of the longitudinal edges (11, 12) of the at least one reinforcement (8, 8', 9, 9', 10, 10'),
- the at least one reinforcement (8, 8', 9, 9', 10, 10') is/are provided on a main face (6, 7) of the rectangular plate (3),
- at least one welding pass is carried out at the internal portion of each of the longitudinal edges (11, 12) of the at least one reinforcement (8, 8', 9, 9', 10, 10') in order to produce an internal weld bead (23) having a connection radius R which is greater than or equal to 4 mm,
- and the chamfers are filled at the external portion of each of the longitudinal edges (11, 12) of the at least one reinforcement (8, 8', 9, 9', 10, 10') by an external weld bead which is produced in at least one pass with addition of metal.

2. Method according to claim 1, characterized in that the at least one welding pass (23) which is carried out at the internal portion of each of the longitudinal edges (11, 12)

of the at least one reinforcement (8, 8', 9, 9', 10, 10') is a welding pass with addition of metal.

3. Method according to claim 1 or 2, characterized in that, after the internal weld bead (23) is produced and before the chamfer (15) is filled at the external portion of the longitudinal edges (11, 12) of the at least one reinforcement (8, 8', 9, 9', 10, 10'), the internal weld bead (23) is further controlled and, if necessary, the faults are ground and the internal weld bead (23) is repaired.

4. Method according to any one of claims 1 to 3, characterized in that the thickness T of the projection (17) is less than the sum of the penetration depth of the internal weld bead (23), the penetration depth of the first pass of the external weld bead and the thickness of any grinding of a fault.

5. Welding method according to any one of claims 1 to 4, characterized in that the internal weld bead (23) is produced by a method selected from the submerged arc, MIG, MAG, TIG and coated electrode methods.

6. Method according to any one of claims 1 to 5, characterized in that the external weld bead is produced by the submerged arc method.

7. Method according to any one of claims 1 to 6, characterized in that the at least one reinforcement (10, 10') is a connection piece between two reinforcements (8, 8', 9, 9') of two adjacent rectangular plates (3, 3').

8. Rack portion of a self-raising oil rig, which rack portion is constituted by at least one rectangular plate (3, 3') which comprises teeth (41, 51) at the longitudinal lateral faces (4, 5) thereof and at least one reinforcement (8, 8', 9, 9', 10, 10') which is in the form of a half-shell and which is welded to a main face (6, 7) of the at least one rectangular plate (3), along the longitudinal edges (11, 12) of the at least one reinforcement (8, 8', 9, 9', 10, 10'), characterized in that the radius of curvature for connection of the internal weld bead (23) is greater than or equal to 4 mm.

9. Rack portion according to claim 8, characterized in that at least one connection weld between a reinforcement (8, 8', 9, 9', 10, 10') and a rectangular plate (3) is constituted by at least one internal weld bead and at least one external weld bead.

10. Device for carrying out the method according to any one of claims 1 to 6, characterized in that it comprises a welding head (27) which is constituted by a nozzle (28) and a chamfer guide (29), the head being carried by the end of an arm (26) mounted so as to be articulated to a movable carriage (30), and in that it comprises means for providing the welding head with filler metal, welding flux and electrical power.

11. Device for carrying out the method according to claim 7, characterized in that it comprises a carriage (22) which carries at least one welding head (37, 38) and guiding means (36), the carriage being suspended on cables (29), and in that it comprises means for providing the at least one welding head (37, 38) with filler metal, welding flux and electrical power.